

HW: Review Sheet #30-39

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Name: _____

Date: _____

A2CC: Adding/Subtracting Rational Expressions

Perform the indicated operation(s) and simplify your result, if possible.

1. $\frac{1}{5z} + \frac{3}{15z}$

2. $\frac{7}{m^2} + \frac{5}{2m}$

3. $\frac{1}{2z} - \frac{3}{14z}$

4. $\frac{7}{2x} - \frac{3}{x^2}$

5. $\frac{2}{x} - \frac{1}{x^2} + \frac{3}{2x}$

6. $\frac{3}{7y} + \frac{5}{2y} + \frac{2}{y^2}$

7. $\frac{x}{x+3} - \frac{2}{x}$

8. $\frac{5}{z} + \frac{3}{z-6}$

9. $2 - \frac{3}{n-4}$

10. $\frac{t}{3} - \frac{1}{2} - \frac{4}{t+3}$

11. $\frac{7}{y} + \frac{3}{4} - \frac{2}{y+4}$

12. $3x + \frac{x-2}{x+1}$

13. $\frac{3}{x-2} - \frac{4}{x+4}$

14. $\frac{3h}{h-1} - \frac{4}{h-2}$

15. $\frac{4a}{2a-1} + \frac{a}{a-3}$

16. $\frac{y-2}{y+4} + \frac{y-3}{2y-1}$

17. $\frac{3z}{z^2+2z} - \frac{1}{2z}$

18. $\frac{4}{f^2} + \frac{1}{f^2-4f}$

19. $\frac{x}{x-4} + \frac{2}{x} + \frac{2x+8}{x^2-4x}$

20. $\frac{1}{3y} + \frac{y^2+1}{y^2-4y} - \frac{y-2}{9y-36}$

21. $\frac{4}{r^2-3r} - \frac{3}{2r-6} - \frac{1}{2r}$

22. $\frac{3}{x^2-2x} - \frac{8}{x^2+2x-8}$

23. $\frac{2v}{v^2-2v-15} + \frac{3}{4v^2+12v}$

24. $\frac{1}{k^2-k-2} + \frac{1}{k^2+2k+1}$

25. $\frac{2}{u^2-4} + \frac{3}{u^2+4u+4}$

26. $\frac{2}{v^2-5v+6} - \frac{5}{v^2+2v-15}$

27. $\frac{y}{y^2-9y+18} - \frac{y-2}{y^2-10y+24}$

28. $\frac{x-7}{x^2+4x-5} - \frac{x-9}{x^2+3x-10}$

29. $\frac{3}{9m^2-48m+64} - \frac{m}{64-9m^2}$

30. $\frac{8z}{25-4z^2} - \frac{2}{2z-5} + \frac{z}{6z+15}$

Answers:

$$1. \frac{2}{5z} \quad 2. \frac{14+5m}{2m^2} \quad 3. \frac{2}{7z} \quad 4. \frac{7x-6}{2x^2} \quad 5. \frac{7x-2}{2x^2}$$

$$6. \frac{41y+28}{14y^2} \quad 7. \frac{x^2-2x-6}{x(x+3)} \quad 8. \frac{8z-30}{z(z-6)} \quad 9. \frac{2n-11}{n-4}$$

$$10. \frac{2t^2+3t-33}{6(t+3)} \quad 11. \frac{3y^2+32y+112}{4y(y+4)} \quad 12. \frac{3x^2+4x-2}{x+1}$$

$$13. \frac{-x+20}{(x-2)(x+4)} \quad 14. \frac{3h^2-10h+4}{(h-1)(h-2)} \quad 15. \frac{6a^2-13a}{(2a-1)(a-3)}$$

$$16. \frac{3y^2-4y-10}{(y+4)(2y-1)} \quad 17. \frac{5z-2}{2z(z+2)} \quad 18. \frac{5f-16}{f^2(f-4)}$$

$$19. \frac{x+4}{x-4} \quad 20. \frac{8y^2+5y-3}{9y(y-4)} \quad 21. \frac{-4r+11}{2r(r-3)}$$

$$22. \frac{-5x+12}{x(x-2)(x+4)} \quad 23. \frac{8v^2+3v-15}{4v(v-5)(v+3)} \quad 24. \frac{2k-1}{(k-2)(k+1)^2}$$

$$25. \frac{5u-2}{(u+2)^2(u-2)} \quad 26. \frac{-3v+20}{(v-3)(v-2)(v+5)} \quad 27. \frac{1}{(y-3)(y-4)}$$

$$28. \frac{1}{(x-2)(x-1)} \quad 29. \frac{3m^2+m+24}{(3m-8)^2(3m+8)} \quad 30. \frac{2z^2-41z-30}{3(2z+5)(2z-5)}$$

$$2) \left(\frac{2}{2} \right) \frac{7}{m^2} + \frac{5}{2m} \left(\frac{m}{m} \right) \quad \text{LCD: } 2m^2$$

$$\frac{14}{2m^2} + \frac{5m}{2m^2} \Rightarrow \boxed{\frac{5m + 14}{2m^2}}$$

$$4) \left(\frac{x}{x} \right) \frac{7}{2x} - \frac{3}{x^2} \left(\frac{2}{2} \right) \quad \underline{\text{LCD:}} \quad 2x^2$$

$$\frac{7x}{2x^2} - \frac{6}{2x^2} = \frac{7x-6}{2x^2}$$

$$6) \left(\frac{2y}{2y} \right) \frac{3}{7y} + \frac{5}{2y} \left(\frac{7y}{7y} \right) + \frac{2}{y^2} \left(\frac{14}{14} \right) \quad \text{LCD: } 2 \cdot 7y^2 = 14y^2$$

$$\frac{6y}{14y^2} + \frac{35y}{14y^2} + \frac{28}{14y^2} = \boxed{\frac{41y + 28}{14y^2}}$$

$$8) \frac{(z-6)5}{(z-6)z} + \frac{3}{z-6} \left(\frac{z}{z} \right) \quad \text{LCD: } z(z-6)$$

$$\frac{5z-30}{z(z-6)} + \frac{3z}{z(z-6)} = \frac{8z-30}{z(z-6)}$$

Can factor but won't reduce.

$$10) \frac{2(t+3)t}{2(t+3)3} - \frac{1}{2} \frac{3(t+3)}{3(t+3)} \frac{4}{t+3} \left(\frac{6}{6} \right) \quad \frac{\text{LCD:}}{3 \cdot 2 (t+3)} \\ 6(t+3)$$

$$\frac{2t^2 + 6t}{6(t+3)} + \frac{-3t - 9}{6(t+3)} + \frac{-24}{6(t+3)}$$

$$\frac{2t^2 + 3t - 33}{6(t+3)}$$